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DATE August 6, 2004

TO:

Name: Commissioner for Patents

Location: Washington, DC

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FORMAL PAPERS

NUMBER OF PAGES 12 INCLUDING THIS COVER PAGE.

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Docket No. M 6678  
SN: 09/780,903  
Art Unit: 3634  
Confirmation No. 3930

Enclosure:

1. Response – 11 pages

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PATENT  
Docket No. M 6678 HAMC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OFFICIAL

In re: Application of  
James K. Hawley

Serial No. 09/780,903  
Filed: February 9, 2001  
Title: LINER STRUCTURES

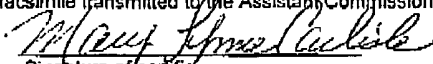
Examiner: K. Tran  
Art Unit: 3634

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Assistant Commissioner for Patents on the date shown below.

August 6, 2004

Date

  
Signature of certifier

Mary Lynne Carlisle

Typed or printed name of certifier

RESPONSE

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Official Action of May 6, 2004, Applicants respectfully request that the rejection be reconsidered in light of the following discussion.

Before discussing the rejection over the prior art, applicants deem it prudent to set forth what they consider to be their invention.

The invention, in its broadest terms, is a liner structure. The liner structure comprises a flexible sheet having a top surface and a bottom surface. The flexible sheet is comprised of a first polymeric resin which is sufficiently soft to render the flexible sheet non-curling and the bottom surface non-skid. The top surface of the flexible sheet has a plurality of upwardly extending ridges comprised of a second polymeric resin which is harder than the first polymeric resin and which provides a low friction surface on the top edges of the upwardly extending ridges.

The features of the invention includes a single polymeric flexible sheet having a top surface and a bottom surface. The flexible sheet comprises a first polymeric resin

**Serial No. 09/780,903**

**Art Unit: 3634**

which is non-curling and the bottom surface is non-skid. The top surface contains a plurality of upwardly extending ridges which are comprised of a second polymeric resin, which is harder than the first polymeric resin, which provides a low friction surface on the top surface of the upwardly extending ridges.

The liner structure being flexible can be rolled since the flexible sheet is exposed on both the top and bottom surfaces of the liner structure.

The remaining claims are directed to features regarding the shape of the flexible sheet, the shape and position of the ridges and the nature of the first and second polymeric resins. Applicants submit that the present invention is neither taught nor suggested by the prior art cited by the Examiner.

Claims 1, 2, 4, 9 and 12 stand rejected under 35 U.S.C. 103(a) as unpatentable over Tan (U.S. 5,20,159) in view of Bustos (U.S. 4,461,388). Applicants respectfully submit that Tan and Bustos alone or in combination neither teach nor suggest the present invention.

The Examiner states:

"Tan discloses an anti-skid liner (10) comprising a sufficiently soft and flexible first polymeric resin base (18) made of resilient material than renders the liner non-curling; a plurality of extended ridges (14) extended downwardly from a bottom surface of the first resin and render the liner to be a non-skid liner."

Applicants request that the Examiner reconsider his understanding of the teachings of Tan. Tan does not teach that the resin base is soft and flexible. The Tan structure requires that the base be deformable which means it can recover its original shape after being deformed. At column 2, lines 31-34 Tan teaches that the anti-skid properties are due to the spikes which penetrate the ice and suction due to the hemispheric recessed areas providing a suction effect between the pad and the ice.

There are no ridges on the bottom surface or the top surface of the Tan structure (see Figs. 1, 2, 3 and 4). The top surface can have anti-slip particles embedded in the surface or can be none slip (col. 2, lines 40-53). The non-skid properties of the bottom surface are due to the spikes and hemispheric depressions. The non-slip properties of

**Serial No. 09/780,903**

**Art Unit: 3634**

the top surface are provided by abrasive particles extending above the top surface. There is neither teaching nor suggestion to provide ridges on the top or bottom surface of the pad. The spikes and particles which extend above the surfaces of the Tan pad are not ridges. A ridge is a long narrow crest of something; a narrow raised strip.

The properties of the top surface of the Tan pad which is anti-slip is opposite to the low friction ridges of the top surface of the liner of the present invention.

Tan is deficient in neither teaching nor suggesting low friction ridges on the top surface or anti-slip ridges on the bottom surface. In addition, Tan does not teach that the deformable pad is soft, the pad only need be deformable. A soft sheet of a polymeric resin could not stand up to heavy foot traffic.

The deficiencies in the teaching of Tan are not cured by combination with Bustos. Bustos discloses a slip surface shelf merchandiser. The shelf merchandiser comprises a rigid shelf member formed from three plies of corrugated plastic. The rigid shelf member is supported in a downwardly sloping manner to permit articles displayed on the shelf to slide to the front of the shelf as items are removed. The slippery surfaced shelf member is rigid and is not supported over a substantial portion of its body except at the edges and near the middle. The top surface of the shelf member has ridges caused by the corrugated center member.

The top surface of the shelf member is made slippery by incorporation of 15% silicone oil in the top sheet of the rigid three ply corrugated shelf member. The top sheet is made from the same plastic as the two additional plies except for the incorporation of 15% silicone oil to provide the slippery surface. This means that the ridges are not formed from a harder plastic than the other plies forming the shelf member. The top surface and the ridges of the Bustos shelf member would be at least the same hardness as the two other plies or would be softer due to the presence of 15% of a silicone oil plasticizer. Applicants submit that there is neither teaching nor suggestion of low friction ridges comprising a polymeric resin harder than the resin of the main sheet.

Applicants submit that there is no teaching or suggestion in the combination of

**Serial No. 09/780,903**

**Art Unit: 3634**

Tan with Bustos of a flexible polymeric resin sheet having a non-slip bottom surface and a top surface comprising ridges comprising a harder polymeric resin than the flexible sheet to provide a low friction surface to the top edges of the upward extending ridges. Applicants submit that the rejection is untenable and request that the rejection be reconsidered and withdrawn.

Applicants submit that the combination of Tan with Bustos is improper. If the teachings of the references were combined, one would arrive at a resilient pad having a slippery top surface or a rigid shelf member having a non-slip top surface. Neither of the combinations would function for their intended purpose. To base a rejection on a combination of references, there must be some thread which connects the references to suggest to one skilled in the art to make the combination. However, the Tan and Bustos references are directed to pads with different properties for different uses and the combination of the references would frustrate the intended purpose of the articles of both references. Since the references are not properly combinable, applicants request that the rejection of claims 1, 2, 4, 9 and 2 be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103(a) over Tan in view of Bustos and further in view of Schottenfeld (U.S. 5,170,903). Applicants submit that Schottenfeld does not cure the deficiencies in the combination of Tan and Bustos. Tan and Bustos have been discussed above. The deficiencies in the combination of references is not cured by combination with Schottenfeld. There is no teaching or suggestion in the combination of Tan with Bustos and Schottenfeld of a flexible sheet having an undulating bottom surface with anti-skid properties. In addition, the combination of Tan and Bustos is improper.

Schottenfeld discloses a flexible pad comprising foamed plastic enclosing a mesh having a plurality of openings extending from the top surface to the bottom surface of the pad. The open cells do not provide an undulating surface (wave like appearance) to the bottom surface of the pad. Figures 3 and 4 do not show an undulating surface (wave like appearance). Figure 3 shows side view of a thin strand of the mesh coated with the foamed resin. However, the large open spaces 26 destroy

**Serial No. 09/780,903**

**Art Unit: 3634**

any wave like pattern on the bottom surface. Applicants submit that Schottenfeld does not cure the deficiencies in the combination of Tan with Bustos and applicants request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103(a) over Tan in view of Bustos and further in view of Yates (U.S. 1,019,312). Applicants submit that Yates does not cure the deficiencies in the combination of Tan and Bustos.

The deficiencies in the combination of Tan in view of Bustos has been discussed in great detail above. The deficiencies are not cured by combination with Yates. Yates discloses a rubber mat for placing in a bathtub. The Yates mat has undulating top and bottom non-slip surfaces. There is no teaching that the undulations or ridges comprise a material which is harder and more slippery than the sheet from which the mat is formed. There would be no suggestion to replace the hard spikes of Tan with the undulations on the bottom surface or that the undulations would provide non-slip properties when combined with Tan. The undulations on the bottom surface would not have any application to Bustos. One skilled in the art combining the teachings of Tan and Bustos with Yates would arrive at a mat having an undulating bottom surface with a rigid, slippery, top surface. The top surface would not have ridges extending from the mat comprising a polymeric resin harder than the mat. Applicants request that the rejection be reconsidered and withdrawn.

Claims 8 and 10 stand rejected under 35 U.S.C. 03(a) over Tan in view of Bustos and further in view of Eiden (U.S. 4,336,293). Applicants submit that Eiden does not cure the deficiencies in the improper combination of Tan with Bustos. As discussed above, the combination of Tan and Bustos is deficient in neither teaching nor suggesting a combination of a soft polymeric resin sheet having ridges comprising a harder polymeric resin extending from the top of the sheet to provide a lower coefficient of friction on the top edges of the upwardly extending ridges. Firstly, the combination of Tan with Bustos does not provide a surface of a flexible sheet having ridges of a harder polymeric resin than the sheet to provide a lower friction surface. The combination of Tan with Bustos would provide a rigid surface with ridges of a softer polymeric resin or

**Serial No. 09/780,903**

**Art Unit: 3634**

at most a polymeric resin with the same hardness as the sheet. The rigid sheet of Bustos is not combinable with the flexible resilient sheet of Tan to form an article suitable for its intended purpose. Forming the article from polyvinyl chloride would not cure the deficiencies in the combination of Tan with Bustos.

Eiden discloses a composite two layer mat having a plasticized polyvinyl chloride first layer and a second layer of a different polymer having abrasive particles embedded in the ridges to make the ridges and the mat non-slip. The two layer composite provides a different structure than the liner structure of the invention which has ridges upwardly extending from the flexible sheet.

Making the mat of Tan from polyvinyl chloride and applying the rigid slippery top layer of Bustos would not form the liner structure of the invention. Applicants submit that the rejection is untenable and request that the rejection be reconsidered and withdrawn.

Claims 5-7 and 11 stand rejected under 35 U.S.C. 103(a) as unpatentable over Tan in view of Bustos and further in view of Bayless et al. Bayless et al. discloses an electrically heated pad having protuberances (Col. 3 lines 50-60) which extend from the upper and lower surfaces. The protuberances are not ridges since they do not extend for any length but merely protrude from the surface. The protuberances are critical to the Bayless et al. invention since they permit the water produced by the melted ice and snow to run off the pad in some direction regardless of the inclination of the mat. Applicants submit that Bayless et al. does not cure the deficiencies in the combination of Tan with Bustos since Bayless et al. does not disclose downwardly extending ridges and Tan and Bustos do not disclose downwardly extending ridges. Applicants request that the rejection be reconsidered and withdrawn.

Claims 1, 2, 4, 9 and 12 stand rejected under 35 U.S.C. 103(a) as unpatentable over Tan in view of Vargo (U.S. 4,328,275). Applicants respectfully submit that Tan and Vargo whether considered alone or in combination neither teach nor suggest the present invention.

As discussed above, Tan discloses a resilient pad having spikes arranged in

**Serial No. 09/780,903****Art Unit: 3634**

hemispherical depressions on the bottom surface and a resilient top surface which is non-skid or is made non-skid by introducing abrasive particles which extend above the top surface. Tan does not disclose that the mat is soft but derives its anti-skid or anti-slip properties on the bottom surface from spikes, which are hard enough to penetrate ice, arranged in hemispherical depressions. When one steps on the mat the hard spikes are driven into the ice and the depression of the hemispherical depressions creates a vacuum which further enhances the non-slip action of the hard spikes penetrating the ice. The spikes must be hard to be able to penetrate ice. Contrary to the Examiner's statement, there are no ridges on the bottom or the top surface of the Tan mat (see Fig. 1 and 2).

The deficiencies in Tan are not cured by combination with Vargo. Vargo discloses a disposable floor mat comprised of a sheet of liquid absorbing matting having raised portions for supporting a person's feet. The raised portions are in the form of ridges and are capped with a liquid repellant coating (col. 1, lines 42-59). The mat is sufficiently rigid and incompressible to support a person's feet with the tops of the ridges providing a "traction surface" (co. 2, lines 10-14). Applicants submit that the water repellant coating is not a low friction coating since it must provide a "traction surface" to prevent slipping.

There is no teaching or suggestion that the surfaces of the ridges are made of a harder material than the ridges or intermediate layers of the mat and in addition provide a low friction surface on the top edges of the ridges. The requirement that the ridges provide a "traction surface" would teach one skilled in the art that the top surfaces of the ridges were a high friction material. The high rigidity of the ridges and the need for a "traction surface" at the ridges at their top edges would lead one skilled in the art combining Tan and Vargo to provide a resilient mat having rigid ridges with a high friction surface coating to provide a non-slip upper surface. There is no teaching nor suggestion of ridges having a low friction surface on the top edges of the ridges since such an arrangement would provide a slippery top surface which would be opposite to the effect required by the Tan and Vargo mats, that is, a non-slip top surface for the



**Serial No. 09/780,903**

**Art Unit: 3634**

mat.

Applicants respectfully submit that a rejection based on the combination of Tan with Vargo is untenable and request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103(a) as unpatentable over Tan in view of Vargo and further in view of Schottenfeld. Applicants submit that the combination of references neither teaches nor suggests the present invention. As discussed in detail, supra, Schottenfeld discloses a bottom mat which has a discontinuous surface caused by large openings which extend from one surface of the mat to the opposite surface. The large voids in the surface prevent the surface from having an undulating or wave-like appearance. Fig. 3 is a cross-section of the bottom mat shown in Fig. 1 along the line 3-3. Fig. 4 shows the shape of the polymer coated filaments but not the shape of the bottom surface which is shown in Fig. 1. It is clear that Fig. 1 does not illustrate an undulating surface. Undulating means a wave like appearance, clearly none of Fig. 1, 4, 5, 6 and 7 show a wave-like or undulating appearance. However, the mat is shown comprising a scrim with large openings covered with a PVC foam. The PVC foam is flexible and provides non-slip properties to the bottom surface of the mat. However, there is no suggestion of a flexible mat having upwardly extending ridges comprising a harder polymeric resin than the mat to provide low friction edges to the ridges. Applicants respectfully submit that the combination of Tan, Vargo and Schottenfeld would neither teach nor suggest the present invention.

Claim 3 stands rejected under 35 U.S.C. 103(a) as unpatentable over Tan in view of Vargo and further in view of Yates. Applicants respectfully submit that Tan, Vargo and Yates in combination neither teach nor suggest the present invention. Tan and Vargo have been discussed in great detail, supra. The deficiencies in the references are not cured by combination with Yates. Yates discloses a non-slip mat for installing in a bath tub. The mat has undulating top and bottom surfaces. The top and bottom surfaces are non-slip (Page 1, lines 103-110). There is no teaching nor suggestion to provide the ridges with low friction material edges to make them slippery. Applicants submit that Yates does not cure the deficiencies in the combination of Tan

**Serial No. 09/780,903**

**Art Unit: 3634**

and Vargo and therefore the combination does not teach or suggest the present invention.

Claims 8 and 10 stand rejected under 35 U.S.C. 103 over Tan in view of Vargo and further in view of Bayless et al. Applicants respectfully submit that Bayless et al. does not cure the deficiencies in the combination of Tan and Vargo. Contrary to the Examiner's opinion, Bayless et al. does not disclose a mat structure with ridges. The Bayless et al. structures requires protuberances to permit the water from melting snow or ice to drain in some direction. The protuberances are critical since ridges permit draining in only two directions. Since Bayless et al. does not disclose ridges but discloses protuberances with drainage spaces on all side as critical, applicants respectfully submit that Bayless et al. in combination with Tan and Vargo neither teach nor suggest the present invention.

Applicants have reviewed the prior art made of record but not relied on, and do not deem the references to be pertinent to the invention.

The Examiner argues that the combination of Tan and Bustos is proper. Applicants submit that one skilled in the art would not provide a low friction surface to a non-slip mat; or, a high friction surface to a slippery structure without frustrating the purpose of the two inventions without inventive effort. In addition, to apply the slippery surface of Bustos to the mat of Tan, the rigid surface would have to be made flexible or the surface partitioned into strips which would require invention. Applicants submit that Examiner Tran has combined 7 references in a plurality of combinations to arrive at the invention. Merely picking and choosing features of the separate inventions is an act of invention. This is especially true where the references with a non-slip bottom surface generally requires non-slip or high coefficient of friction top surfaces. The combination of a non-slip bottom surface and a top surface with ridges having low friction edges is neither taught nor suggested by the combination of references.

Combination of the resilient mat of Tan with the rigid sheet of Bustos would not lead one skilled in the art to the present invention. In addition, the plasticized ridges of Bustos must of necessity be softer than the unplasticized plastics of which the

**Serial No. 09/780,903**

**Art Unit: 3634**

supporting structures is formed.

The Examiner states:

"With respect to applicants remarks that the liner of Tan cannot be used as a shelf liner because the bottom extending ridges of Tan are sufficiently hard to penetrate the ice surface such that it would mar the surface of the shelf, the examiner respectfully disagrees. In particular, there is nowhere in the specification discloses that the bottom ridges of Tan are hard so that to prevent the liner from using on a shelf."

Firstly, applicants disagree with the Examiner's characterization of the Tan reference as disclosing a mat having ridges on the bottom surface. Nowhere in the Tan reference is the mat characterized as having ridges on the bottom surface. Tan characterizes the bottom surface as having a plurality of spikes which are generally considered a relatively long, compared to the width of the base, pointed member. To be able to penetrate ice, which is known to be hard, the spikes must be at least as hard as the ice. Generally metal tools are used to penetrate ice. Inherently, the spike must be hard and would not be satisfactory for anchoring a mat to a wooden surface; for to anchor the mat, the spike would have to penetrate and mar the underlying surface.

Applicants submit that there is no incentive or thread in Tan and Bustos which would lead one skilled in the art to combine the references. Even if the teachings of the reference were combined, one would not arrive at the present invention as claimed. The combination of Tan with Bustos would provide a mat which if not rigid would have a rigid top surface which would make the article entirely different from the liner of the present invention which has a soft high friction upper surface except where the harder plastic ridges are present.

**Serial No. 09/780,903**  
**Art Unit: 3634**

In view of the above discussion, applicants respectfully submit that the application is in condition for allowance and favorable consideration is requested.

Respectfully submitted,



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